## WATER QUALITY

### WQ-1: Improve harmful algal bloom detection and forecasting in the U.S. and Mexican Gulf States

**36 Month Outcomes:**
• Improve the current HAB Forecasting System off the Southwest Florida coast to better identify the onset of blooms and better predict the transport of blooms.
• Develop a satellite detection, forecasting, and Internet-based notification capability for *K. brevis* off the southern coast of Texas.
• Develop a satellite detection and Internet-based notification capability for *K. brevis* off the coast of the Mexican Gulf state of Veracruz.

**Action Blueprint:**

| ACTION | LEAD | CONTRIBUTOR | COLLABORATOR | WHAT WILL YOU DO / DELIVER? | STATUS 7-18-06 | REFINED OUTCOME | KEY NEXT STEPS |
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| 1. Improve the operational HAB Forecasting System off the Southwest Florida coast to better identify the onset of blooms and better predict the transport of blooms. | Florida, NOAA | NASA, NRL | | FL will help coordinate the implementation of an improved HABs Forecasting System off the Southwest Florida coast. NOAA will improve its current HAB Forecasting System off the Southwest Florida coast (see: http://www.csc.noaa.gov/crs/habf/) to better identify the onset of blooms and better predict the transport of blooms. (Lead: NOS NCCOS)<br>NASA has a cooperative agreement with the US Naval Research Laboratory to increase the availability of NASA data and NRL remote sensing techniques to the operational HAB forecasting system. Project results will be available to the Alliance. | (1) NOAA deployed two Brevebuster sensors at nearshore platforms in Venice and Naples.<br>(2) the State of Florida and NOAA deployed three autonomous underwater gliders with Brevebuster sensors in April 2006, to better detect blooms offshore.<br>(3) NOAA is currently developing a 2-D model to better forecast the tranport of existing blooms within the HABs Forecasting System.<br>(4) NASA, NOAA, and the Naval Research Laboratory (NRL) collaborated on new data products for HABSOS decision support. These products are derived from NASA imagery and NRL modeling capabilities, providing coastal resource managers detailed information on tracking turbidity plumes and chlorophyll anomalies. NASA and NOAA are developing an implementation plan to transition these new capabilities to NOAA and HABSOS project. | | |
| 2. Conduct an interagency workshop to review scientific advances related to red tide in the Gulf of Mexico and identify future priorities for the region. | NOAA, Florida | | Louisiana | NOAA and FL will convene a workshop to review scientific achievements in understanding red tide and developing methods to mitigate the impacts of red tide on Gulf States (Lead: NOS NCCOS).<br>LA will participate to the extent practicable in a review capacity and will attend workshop as time and funding allows. (Lead: LDEQ) | (1) NOAA, Mote Marine Lab, and FWRI hosted a workshop in Sarasota, Florida, on July 17-20, 2006, to discuss current red tide research efforts and address areas that need further exploration (called the State of Research on Red Tide in the Gulf of Mexico Workshop). Fifty-five scientists and managers participated, including two red tide researchers from Mexico. By sharing opinions and concerns via on online survey and in three simultaneous public meetings along the SW Florida coast on July 20, the public played an integral role in the direction of future red tide research efforts. | | STEP COMPLETE |

• LEADS are responsible for accomplishing the activity
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| 3. Hold workshops with local, state, and federal expert scientists to train personnel in HAB field sampling and microscopic identification methods and to demonstrate toxin-detection methods. | Florida, EPA | FDA | Alabama, Louisiana, Mississippi, Texas | FL will co-lead these workshops. (Lead: Florida HAB Task Force and FDEP CAMA)<br>EPA will co-lead and co-sponsor (i.e., resources and administration) the design, development, and implementation of these workshops.<br>FDA will provide training in field and lab methods for phytoplankton and for toxins.<br>AL will participate to the extent practicable in a review capacity and will attend workshops when time and funding allow. (Lead: ADEM)<br>LA will participate to the extent practicable in a review capacity and will attend workshops when time and funding allow. (Lead: LDEQ)<br>MS will send staff to participate.<br>TX will consider hosting a 2007 training workshop. | (1) FL Fish and Wildlife hosted a phytoplankton identification training session in St. Petersburg June 7-9, 2006 (Workshop organizer Jennifer Wolny) with participants from TX, LA, AL, and FL. It was very beneficial in terms of education (scope included toxic species of Protoperidinium, Karenia, and Prorocentrum; cyanobacteria, and flagellates) and networking to improve communication across the coast. We now have contacts in all five states for our informal alert system. Karen Steidinger alluded to holding another session next year and I hope it will include a bit more toxin training.<br>(2) FDA has identified the molluscan metabolites of parent brevetoxins from K. brevis and developed a confirmatory liquid chromatography - mass spectrometric (LC/MS-MS) method for the most common (across spp.) of these metabolites (i.e. Markers of exposure). FDA is now leading the AOAC validation collaborative study of the LC/MS-MS method. This method is definitive and therefore confirmatory for brevetoxin contamination of shellfish reefs. In addition, FDA is participating in the AOAC validation collaborative<br>(3) FL DEP is leading a study of LC/MS and ELISA | | (1) TX will consider hosting a 2007 training workshop, and solicit sepcific training topics (D. Buzan).<br>(2) Investigate possibility of FWRI hosting a second workshop (S. Wolfe).<br>(3) Need to better coordinate this action, and regional HABs monitoring efforts in general, with GCOOS. |
| 4. Advance technologies for rapid field screening and enhanced real-time remote sensing, platform sensing, and autonomous sensing of HABs. | NOAA | | Louisiana, USACE, NASA, EPA | NOAA will test and provide the Alliance and GCOOS with the results of in situ optical HAB detection (off Corpus Christi and along West Florida Shelf (WFS), enhanced nearshore real-time remote sensing systems on WFS, and autonomous sensing to provide early warning of HABs for Texas and Florida (Lead: NOS NCCOS)<br>USACE will contribute information and technologies from existing and future remote sensing platforms installed to analyze releases from Lake Okechobee relative to HAB.<br>NASA will identify and provide results from previously funded and underway projects addressing remote sensing of HABs.<br>EPA will assist in coordinating federal investments in advanced field screening technologies (e.g., NSF funded autonomous sensor development programs underway at the Mote Marine Lab).<br>LA will provide in-kind support as resources will allow. | (1) The BreveBuster is a sensor that can detect the toxic algae, Karenia brevis (commonly known as the red tide organism), in coastal waters. With close collaboration between the State of Florida and NOAA, three such sensors were deployed on autonomous underwater gliders off the Southwest coast of Florida in April 2006. This effort greatly enhances the ability to identify the onset of blooms and better predict the transport of blooms. | | (1) Follow-up with Henry Folmar about fixed Brevebusters sensors in MS (B. Ache).<br>(2) Outreach information on NOAA's MERHAB Program (B. Ache). |
| 5. Independently evaluate and compare the multiple methods of HAB detection technologies under development for *K. brevis* against microscopic identification methods. | Florida, EPA | | Louisiana, Mississippi | FL will co-lead this evaluation. (Lead: Florida HAB Task Force)<br>EPA, with resources from the EPA Advanced Monitoring Initiative (AMI), will team with project partners to technically support the evaluation of detection methodologies.<br>MS will provide in-kind assistance.<br>LA will provide in-kind support as resources will allow. | (1) Tammi Richardson and Jay Pinkney of the University of South Carolina held a Karenia brevis quantification by pigment detection workshop in March 2006. Though the methods needs refinement it may be considered in the methods evaluation objective. Participants from TX, MS, AL and FL worked in Columbia, SC for four days extracting and measuring pigments by HPLC. | | (1) FWRI has the task underway (details coming from S. Wolfe). |

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| 6. Conduct studies to determine the public health, natural resources, and socioeconomic impacts of HABs in the Gulf region. | EPA | NOAA | NSF, Louisiana, Mississippi | EPA will work in collaboration with key State and Federal partners throughout the region to assess the public health, natural resource, and economic risks and impacts from HABs. The initial study will be concluded within 24 months of the initiation of this plan and updated on a periodic basis as determined by the Alliance.<br>NSF could possibly fund such studies, but the agency's ability to support proposed research and studies is dependent on the submission of proposals and peer review of those proposals.<br>NOAA will fund research to improve the prediction of potential respiratory irritation at specific Gulf of Mexico beaches; to validate ELISA for use as a regulatory alternative for shellfish monitoring and to determine toxin impacts on marine mammals (Lead: NOS NCCOS)<br>LA will provide in-kind support as resources will allow.<br>MS will provide in-kind assistance. | (1) FL-CDC studies on health impacts off coast of SW Florida (more info from B. Bibler).<br>(2) Mote study on hospital admissions by B. Kilpatrick.<br>(3) GMNET incident-reporting database system effort has fallen by the wayside (no funding to support) (S. Jordon). | | (1) TX applying for NIEHS funds to study public health impacts off of Texas coast (D. Buzan).<br>(2) Alliance membership should consider applying for EPA GoMex funds to revive the GMNET system (S. Jordon).<br>(3) The document "Harmful Algal Research and Response: A Human Dimensions Strategy - Following the Recommendations of the National Plan for Algal Toxins and Harmful Algal Blooms" (Bauer, M., ed. 2006) outlines a research strategy for public health, natural resource, and socioeconomic impacts (C. Dorsey). |
| 7. Test and provide the Alliance and GCOOS with the results of an in situ optical early warning HABs system off the coast at Corpus Christi, Texas. | NOAA | | EPA | NOAA will test and provide the Alliance and GCOOS with the results of an in situ optical early warning HABs system off the coast at Corpus Christi, Texas (Lead: NOS NCCOS). | (1) NOAA MERHAB funded project to monitor K. brevis using a flow-cam technology on a buoy, but has met technological problems;however trying this techology on a pier with more success (Validating Remote Detection of Karenia brevis, Tracy Villareal). | | |
| 8. Fund research into relationship between anthropogenic activities and planktonic cell counts, environmental conditions that lead to bloom conditions, and testing new HAB detection and tracking technologies for routine use in observation, monitoring and forecasting programs. | Identification of Lead still pending. | NOAA | | Through the Ecology and Oceanography of HABs (ECOHAB) and Monitoring and Event Response for HABs (MERHAB) programs, NOAA will conduct targeted Gulf of Mexico research on the detection, causes, and dynamics of HABs, forecasting growth, transport, and toxicity, and transfer new technologies to enhance Gulf of Mexico HAB monitoring and forecasting programs. ECOHAB and MERHAB research projects will predict and ameliorate HAB impacts on higher trophic levels and humans. (Lead: NOS NCCOS) | (1) FL and TX have volunteer HABs monitoring programs underway for tracking purposes (D. Buzan).<br>(2) FL water management districts funds for local monitoring from Lake O. discharge (S. Wolfe).<br>(3) LUMCON has an ongoing program to monitor algal species in the Barataria-Terrebonne estuary; EPA GMP is funding a compilation of these data (F. Kopfler)<br>(4) TAMU boat mounted "dataflow system" monitors water chemistry and cholophyll and relating to inflow and other anthropogenic activities (D. Buzan). | | |
| 9. Collaborate with existing Gulf State programs to inform and educate the public about HABs and management actions taken to protect public health; expand educational and outreach methods used to inform the public about HABs and their impacts. | EPA | Florida, USFWS | Louisiana, Mississippi, NSF | EPA will team with additional partners and work with the Alliance Education Network Coordinator to develop and implement a strategic outreach plan for this action.<br>USFWS will assist in educating the public about HABs and their impacts at its coastal National Wildlife Refuges.<br>FL will integrate HAB information into community education programs. (Lead: FDEP CAMA)<br>The NSF-funded COSEE Centers located on the Gulf Coast could serve as a point of dissemination for such information (which would be coordinated through the Centers themselves, not through NSF).<br>MS will provide in-kind assistance.<br>LA will provide in-kind support as resources will allow. | (1) FL and TX have HABs webpages. | | (1) The WQ PIT will hand this activity over to Gulf Alliance Education and Outreach Network for implementation. |

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| 10. Implement an operational HAB forecasting capability of the South Texas coast. | NOAA, Texas | | NASA, NRL | NOAA will conduct required research to develop an operational HAB Forecasting System for the western Gulf of Mexico. (Lead: NOS NCCOS)<br>TX will help coordinate the development of an operational HAB forecasting capability off the coast of Texas. (Lead: TPWD) | (1) Three meetings were held in July 2006 to meet with members of the local chamber of commerce, tourism agencies and health departments about plans to provide harmful algal bloom (HAB) bulletins and public advisories for the coast of Texas. In collaboration with the Texas Parks and Wildlife Department (TPWD), NOAA will demonstrate an operational capability for HAB bulletins for Texas in October 2006. The purpose of these meetings was to educate the participants about HABs and their impacts, inform them of NOAA HAB forecasts, as well as answer any questions and alleviate any concerns the participants may have about providing public health impact information to the public. | | (1) MS would like to develop a detection capability (H. Folmar). |
| 11. Develop a satellite detection and Internet-based notification capability for *K. brevis* off the coast of the Mexican Gulf state of Veracruz. | EPA | NASA, NRL, NOAA, Papaloapan River Basin Development Council (Veracruz) | GCOOS, Gulf of Mexico States Accord, State Department | EPA, with resources from the EPA Advanced Monitoring Initiative (AMI), will team with project partners including the Gulf of Mexico States Accord's Veracruz representatives to develop a satellite detection and Internet-based notification capability off the coast of Veracruz, Mexico.<br>EPA will work in collaboration with the GCOOS Regional Association and State Department to help integrate and standardize the efforts undertaken in Veracruz with those utililized in the southwest Texas and South Florida components of Action WQ-1.<br>State Department will facilitate, as appropriate, contacts with Mexican federal and state officials to explore their interest in participating in project activities, according to guidance from the Alliance. | (1) The HABSOS Program is supported through collaborative efforts of EPA, NOAA, Gulf of Mexico Program (GMP), Naval Research Laboratory (NRL), National Association of Marine Laboratories, U.S. Integrated Ocean Observing System, and the five U.S. Gulf States. In January 2006, the GMP was awarded FY06-07 funds through the EPA Advanced Monitoring Initiative (AMI) to support the expansion of HABSOS into Mexico. Working in close partnership with Consego de Desarrollo del Papalopapan (CODEPAP), the project will support the installation of two coastal meteorological stations and three K. brevis (the red tide organism) BreveBuster sensors in the vicinity of Veracruz, Mexico. EPA, NOAA, NASA, and NRL will develop methods to employ ocean color imagery for HAB detection. The project will provide a bi-national web-based data management and communications system to expand the capabilities of coastal resource agencies to rapidly collect and disseminate data and information on HABs event and related environmental factors.<br>(2) EPA and NOAA/NWS met with Mexican officials | | (1) GMP on track to deliver product at the end of 2007 (M. Magee) |
| 12. Install meteorological stations in the near coastal zone where required to forecast surface currents. | EPA | NOAA | Lousisiana, Mississippi | EPA, with resources from the EPA Advanced Monitoring Initiative (AMI), will team with project partners including the Gulf of Mexico States Accord's Veracruz representatives to support the installation and pilot operation of 2 pilot meterological stations off the coast of Veracruz, Mexico.<br>NOAA will provide meteorological observations from National Water Level Observation Network stations that have meteorological sensors.(Lead: NOS CO-OPS)<br>MS will provide in-kind assistance.<br>LA will coordinate as resources will allow. | (1) EPA and NOAA will install two meteorological stations off the coast of Vercruz to support the development of a satellite and notification capability for K. brevis (M. Magee). | | |
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| **WQ-2: Improve beach water quality management** | | | | | | | |
| **36-month outcomes:**<br>• Conduct a peer-reviewed field evaluation of current bacterial source tracking capabilities in an estuarine recreational area, and select two methodologies for intensive field testing/validation.<br>• Implement pilot testing of these two methods in five Gulf of Mexico estuaries with varying environmental conditions (preferably one location in each Gulf state). | | | | | | | |
| **Action Blueprint:** | | | | | | | |
| 1. Conduct a "state of the Gulf" workshop on pathogen indicators in recreational marine waters, epidemiological correlations, and microbial source tracking research, with an endpoint of selecting the site and designing the study and the parameters for evaluation. | EPA | USGS, NOAA, Mississippi | Alabama, Louisiana, FDA, NSF | EPA, via an existing Congressionally authorized and appropriated agreement, with the University of Southern Mississippi to assist in such actions, will design and implement this workshop. Additionally, EPA, through its oversight regions in the Gulf (Regions 4 & 6), will provide policy advice and technical assistance to these actions.<br>NOAA will participate in the marine pathogen workshop, if asked by the Alliance (Lead: NOS NCCOS)<br>NOAA will contribute to the Alliance the results of an active research program in BST, specifically tracking fecal coliform to human, wildlife or domestic animal sources. (Lead: NOS NCCOS)<br>USGS will provide experience in BST methods and in forecasting beach contamination.<br>MS will provide in-kind support and financial assistance.<br>NSF will send a representative to the workshop.<br>AL will participate to the extent practicable in a review capacity and will attend workshops when time and funding allow. (Lead: ADEM)<br>LA will participate to the extent practicable in a review capacity and will attend workshops when time and funding allow.<br>Indicator methods are being developed by FDA and FDA will pa | (1) Dr. RD Ellender of the University of Southern Mississippi is organizing a meeting on December 6-8, 2006 in Biloxi with finincial support from the US EPA to network the practioners of microbial source tracking in the Southeastern US. It includes investigators from EPA Regions 4 and 6, as well as three persons who asked to be invited, included Charles Carson of the University of Missouri, Mike Sadodosky of the University of Minnesota, and Don Stockell of the USGS. Approximately 40 persons are expected to attend the conference. | The "product" of WQ-2 is a tool to help regulatory agencies identify sources of microbial pollution, as this contamination relates to human health. The primary product should distinguish human versus non-human sources. Distinguishing among sources of non-human contamination is an important secondary focus to assist the TMDL process.<br>WQ-2 is laid out as a sequence of dependent steps, and the Step 1 workshop should be used to more definitively define the product and scope of the evaluation.<br>Counting on a proposal to the GMP Alliance RFP to acocmplish WQ-2, but have several grant conditions: (1) State WQ, health, and shellfish representatives must be involved in the workshop process (to design evaluation and consider results of evaluations); (2) The field evaluations must demonstrate effective methods in shellfish growing waters and primary contact marine recreational waters (i.e., beaches); and (3) Any contract needs to maintain GOMA oversight of experimental design steps. | (1) EPA, as a funder of the Ellender workshop, should convey the discussions of the Alliance WQ group about the "state of Gulf" workshop, and see if they can be one in the same (F. Kopfler).<br>(2) The EPA Gulf Ecology Lab volunteered to be a backup if this workshop or an RFP proposal workshop does not fit the bill (S. Jordon).<br>(3) Rename this effort to MST - Microbial Source Tracking (S. Jordon)<br>(4) Ensure this workshop focuses on MST (versus including the indicators question and epidemiological correlations) - sounds like the scope of the Ellender workshop has this focus (B. Bibler) |
| 2. Conduct a comprehensive field evaluation of current bacterial source tracking capabilities. | EPA | Mississippi | Alabama, Louisiana, FDA | EPA will provide technical assistance to this action.<br>MS will provide in-kind assistance.<br>Alabama will collect samples when stations are consistent with other program sampling activities. (Lead: ADEM)<br>Louisiana will participate as resources will allow.<br>FDA will contribute results of recently-started field studies using traditional indicators, male-specific bacteriophage, and direct measure of norovirus. | | | |

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| 3. Conduct a workshop to evaluate the field evaluation results and select two methods for use in the pilot studies; select the pilot study areas. | EPA | Mississippi | Alabama, Louisiana, USGS, FDA | EPA, via an existing agreement with the University of Southern Mississippi to assist in such actions, will design and implement this workshop. Additionally, EPA, through its oversight regions in the Gulf (Regions 4 & 6), will provide policy advice and technical assistance to these actions.<br>MS will provide in-kind assistance.<br>USGS will provide expertise in study design and analytical methods.<br>Alabama will participate to the extent practicable in a review capacity and will attend workshops when time and funding allow. (Lead: ADEM)<br>LA will participate to the extent practicable in a review capacity and will attend workshops when time and funding allow.<br>FDA will participate in this workshop. | | | |
| 4. Pilot test the two preferred bacterial source tracking methodologies in five Gulf estuaries (with varying environmental conditions). | EPA | Mississippi | Louisiana | EPA will provide technical assistance to this action.<br>MS will support pilot testing in an MS estuary.<br>LA will provide in-kind support as resources will allow. | | | |
| 5. Evaluate bacterial sources responsible for the contamination of shellfish growing waters in each of the five pilots. | EPA | FDA | Louisiana | EPA will provide technical assistance to this action.<br>FDA will provide results of studies on environmental fates of pathogens and indicators, and can collaborate on traceback studies.<br>LA will participate as resources will allow. | (1) The state shellfish control authority in each state already has sanitary surveys of shellfish growing waters that describe any potential sources of pollution. | | |
| 6. Conduct a final workshop to evaluate the results of pilot studies and prepare a final report. | EPA | Mississippi | Louisiana, USGS, FDA | EPA, via an existing agreement with the University of Southern Mississippi to assist in such actions, will design and implement this workshop. Additionally, EPA, through its oversight regions in the Gulf (Regions 4 & 6), will provide technical assistance to these actions.<br>MS will provide in-kind support and financial assistance.<br>USGS will provide expertise in review of study results and manuscript peer review.<br>FDA will participate in this workshop.<br>LA will participate and attend workhop as resources will allow. | | | |
| 7. Equip state laboratories and train state and local personnel in specific bacterial source tracking methods. | EPA | NOAA | Louisiana, Mississippi | EPA will work with state partners to assess the costs necessary to equip their laboratories and train personnel to conduct the selected BST methods. EPA will also assist the states in preparing and supporting financing strategies for the effective implementation of these effects Gulf-wide.<br>At the specific request of the Gulf States, NOAA will train state personnel in specific BST methods. (Lead: NOS NCCOS)<br>MS will provide in-kind assistance.<br>LA will participate as resources will allow. | | | |
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| **WQ-3: Improve government efficiency in water quality monitoring** | | | | | | | |

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**36-Month Outcome:** Implement a regional pilot effort to coordinate and standardize state and federal water quality data collection activities in the Gulf region for one or more nutrient parameter(s) and/or one or more pathogens.

Action Blueprint:

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| 1. Host an annual Gulf of Mexico Forum for Environmental Monitoring to promote coordination of water quality monitoring by state, local, and federal agencies. | EPA | USGS, USFWS, Mississippi | Alabama, Louisiana, NOAA, MMS | EPA will co-lead and co-sponsor (i.e., resources and administration) the design, development, and implementation of this regional forum.<br>USGS and USFWS will assist in planning and goal setting.<br>MS will provide in-kind support and will participate.<br>NOAA will participate in the environmental monitoring forum, if asked by the Alliance (Lead: NOS NCCOS)<br>MMS will utilize expertise to ensure efforts are consistent and compatible with other ongoing efforts.<br>AL will participate to the extent practicable in a review capacity and will attend workshops when time and funding allow. (Lead: ADEM)<br>LA will participate to the extent practicable in a review capacity and will attend workshops when time and funding allow. | (1) The Gulf of Mexico Program (GMP) Monitoring, Modeling, and Research Focus Team coordinates efforts (e.g., sharing information, making recommendations, providing assistance) on monitoring, modeling and research issues in the Gulf of Mexico ecosystem. The Team provides a forum for regular interaction among members of the monitoring, modeling, and research community to assist in the GMP in the application of monitoring data, models, and research findings to support scientific assessments and decision making in response to key environmental issues in the Gulf ecosystem.<br>(2) The Gulf of Mexico States (Alabama, Florida, Louisiana, Mississippi, and Texas) have agreed, through their interactions with the Gulf of Mexico Program (GMP), to coordinate of their estuarine and coastal monitoring and assessment activities and to investigate the development of a joint Gulf states Coastal Monitoring Program on the measurement of the status and trends of ecological condition in coastal resources.<br>Through its involvement with the GMP and several Gulf state resource agencies, EPA's Enviro | | (1) EPA GED, in partnership with the EPA GMP, will investigate planning and hosting this workshop in November 2006 (S. Jordon and F. Kopfler).<br>(2) Form a program committee with 1 representative from each state (MS - Folmar will ID someone; FL - S. Wolfe; TX - Buzan will ID someone; LA - Sabins; AL - Ornelas will ID someone) to plan the scope of the workshop.<br>(3) Any effort should be coordinated with a EPA R6 WQ coordination workshop (D. Buzan). Should investigate if R4 does this. If so, hold the two regional workshops together. EPA R6 will look into this possibility (M. Schaub).<br>(4) One goal of the workshop is to have in attendance those State representatives that can "commit" to changes in WQ monitoring and accredidation standards that will result in coordinated monitoring.<br>(5) This forum should also focus on facilitating management actions based on sound, quality, and coordinated WQ monitoring - this is one of the long-term motivations for such a Gulf region WQ monitoring workshop (M.E. Whitworth and D. Buzan). |
| 2. Comprehensively survey state, local, and federal agencies for types of water quality data being collected, methods of collection, analytical methods, quality assurance protocols, proprietary restrictions, and database platforms. | Identification of Lead still pending. | NOAA, USGS, USFWS, Mississippi | Louisiana, USACE, MMS | NOAA will provide data about NERRS System-wide monitoring program including rationale for protocols and quality assurance (Lead:NOS OCRM, NOS NERRS)<br>USGS will contribute significant experience in hydrological monitoring to help coordinate standards and analytical methods.<br>USFWS will contribute environmental contaminants expertise to help coordinate standards and analytical methods.<br>MS will provide in-kind support.<br>USACE can respond to the survey with information on the WQ data collected as part of its studies and projects.<br>MMS will utilize expertise to ensure efforts are consistent and compatible with other ongoing efforts.<br>LA will provide in-kind support as resources will allow. | (1) A Proposal for a National Monitoring Network (http://acwi.gov/monitoring/network/ceq_proposal.html): The Council on Environmental Quality (CEQ) and the National Science and Technology Council (NSTC) [Subcommittee on Water Availability and Quality (SWAQ) and Joint Subcommittee on Oceans (JSO)] propose an initiative to address all three Ocean Commission recommendations in Chapter 15: Creating a National Water Quality Monitoring Network. The Ocean Commission recommends: (a) development of a national monitoring network that coordinates and expands existing efforts; (b) that the network include coverage in both the coastal and upland areas that affect them, and is linked to the Integrated Ocean Observing System; and (c) that the network has clear goals, specifies core variables and an appropriate sampling framework, and is periodically reviewed and updated. As indicated in the U.S. Commission on Ocean Policy's recommendations, NOAA, NASA, EPA, USGS, USACE, and other federal agencies as appropriate would collaborate in and support this assessment. The advice, counsel, and recomm | | (1) After the workshop in WQ3-1, which will define the exact parameter suite involved, existing survey results will be collected and delivered to Steve Wolfe (FL DEP) by 1 representative from each state. |

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| 3. Develop accountability tools and accreditation standards for laboratories performing analyses included in Gulf-wide monitoring databases. | Identification of Lead still pending. | USGS, Mississippi | Louisiana, USACE, MMS, USFWS, EPA, NOAA | USGS will help oversee development of quality assurance and quality control protocols.<br>MS will provide in-kind support.<br>USACE will share recently prepared guidance for quality assurance of water quality laboratory testing with the Gulf team for this action.<br>MMS will utilize expertise to ensure efforts are consistent and compatible with other ongoing efforts.<br>USFWS will collaborate with the States and other Federal agencies.<br>EPA will collaboratively provide policy and technical assistance to this action.<br>NOAA will provide NERR System-wide Monitoring Program standards and protocols for water quality data collection, analysis, and quality control for use as a model (Lead: NOS NERRS)<br>LA will provide in-kind support as resources will allow. | (1) The Methods and Data Comparability Board and the National Water-Quality Monitoring Council are preparing lists of what are believed to be the necessary or "core metadata" to allow comparability assessments. The proposed lists are not a set of required information but are recommended to help data collectors and data managers more effectively characterize their data and thereby facilitate and promote the use of those data by others. | | (1) John Macauley, EPA GED, can assist in accredidation coordination discussions with the Gulf states (S. Jordon). |
| 4. Facilitate the selection of a pilot parameter for monitoring coordination and standardization by state and federal water quality agencies and GCOOS (leverage possible linkage to National Water Quality Monitoring Council regional pilot activities). | Identification of Lead still pending. | Mississippi | Louisiana, GCOOS, National Water Quality Monitoring Council, NOAA, USGS, EPA | MS will provide in-kind support.<br>NOAA can lend expertise on standards and protocols for collection, analysis and quality control. The National Monitoring Network design is almost completed and should include operational sites chosen in consultation with Regional Associations, such as GCOOS. (Lead: NOS NERRS with NCCOS participation)<br>USGS will coordinate with other Federal, state, and local participants.<br>EPA will collaboratively provide policy and technical assistance to this action.<br>LA will provide in-kind support as resources will allow. | (1) In August 2006, F. Kopfler contacted Chuck Spooner, NWQMC Co-Chair, about the Alliance's desire to be a pilot. | | (1) Facilitate a Gulf of Mexico regional pilot through the National WQ Monitoring Council in 2008 (S. Jordon and F. Kopler). Coordinate an opportunity (in tandem with the Nutrients PIT) for the National WQ Monitoring Council to present to the Alliance; also allow Greg Steyer to present on the existing Gulf region integrated monitoring plan (M. Magee).<br>(2) Could we use standard sampling and data management techniques for HABs for the Alliance parameter - for example chlorophyll and HABs? Or select a parameter already sampled in all 5 Gulf States? There is also an argument not to try to coordinate a 106 parameter? |